

interspecific hybrids suggest a large degree of chromosomal homology among the species, although small translocations or duplications may exist. Intraspecific, interpopulation hybrids in *Limnanthes* are generally fertile, with a few exceptions in *L. montana* and *L. striata*. Chromosome counts of $n = 5$ are reported for *Floerkea proserpinacoides* and *L. macounii*, thus completing a cytological survey of the family. Habitat data are recorded for *L. macounii*, now known from only a single population on Vancouver Island. Range extensions of *L. alba alba*, *L. floccosa floccosa*, and *L. striata* are given in the North Coast Ranges, and *L. douglasii sulphurea* is reported from San Mateo Co. Further field work on *Limnanthes* "trinity," considered to be an underscribed species in an earlier paper, indicates that these disjunct populations of this entity are best referred to *L. striata*.

LITERATURE CITED

- HAUSER, E. J. P., and J. H. MORRISON. 1964. The cytochemical reduction of nitro blue tetrazolium as an index of pollen viability. *Amer. J. Bot.* 51:748-752.
- HITCHCOCK, C. L. 1961. *Limnanthes*. In C. L. Hitchcock, A. Cronquist, M. Ownbey, and J. W. Thompson, *Vascular Plants of the Pacific Northwest*. Part 3. Univ. Washington Press, Seattle.
- MASON, C. T. 1952. A systematic study of the genus *Limnanthes* R. Br. *Univ. Calif. Publ. Bot.* 25:455-512.
- ORNDUFF, R. 1963. Experimental studies in two genera of Helenieae: *Blennosperma* and *Lasthenia*. *Quart. Rev. Biol.* 38:141-150.
- . 1966. A biosystematic survey of the goldfield genus *Lasthenia*. *Univ. Calif. Pub. Bot.* 40:1-92.
- . 1969. *Limnanthes vinculans*, a new California endemic. *Brittonia* 21:11-14.
- , and T. J. CROVELLO. 1968. Numerical taxonomy of *Limnanthaceae*. *Amer. J. Bot.* 55:173-182.

REVIEWS

Flora of the Galápagos Islands. By IRA L. WIGGINS and DUNCAN M. PORTER. xx + 998 pp., 96 color photos, 268 line figures, 170 range maps. Stanford University Press. 27 May 1971. \$37.50.

The Galápagos continue to be fascinating as much in fact as in fancy since they became famous to biologists following the visit of Charles Darwin. He had been preceded by only a few other plant collecting enthusiasts, among them David Douglas and John Scouler. The book by Wiggins and Porter, which includes the contributions from 28 other botanists, goes a long way towards confirming that in addition to the fabled animals, these islands do indeed have plants, many of them also interesting. According to G. L. Stebbins (1966, p. 46. In: *The Galápagos*, Ed. R. I. Bowman, Univ. Calif. Press), some aspects of the specimens of higher plants of this archipelago collected by Darwin helped to lead the latter "along the road toward the Origin of Species . . ."

The taxonomic portion includes 107 families, 348 genera, and 642 species. Better than a third (228 species and subspecies) are endemic. "Some" 395 taxa are illustrated, "at least one species in every genus considered." There are identification keys to all taxa, generous descriptions usually with valuable supporting commentaries,

distribution maps for each species within the Galápagos, and some 50 new chromosome number reports. Since this taxonomic portion is so competently presented, the cost of approximately 6 cents per species ought to seem less painful.

The taxa are organized into non-seed bearing vascular plants; Dicots divided into Apetalae, Gamopetalae, and Polypetalae; and finally, Monocots. All taxa within each of the above categories are in alphabetical sequences. The line drawings, contributed by several artists, generally are excellent. The two most frequent initials appear to be those of the senior author, who is thus shown to be an accomplished artist, and of Jeanne R. Jannish whose careful work has embellished many publications. In some instances, the expertly drawn dissections lack explanations in the legends. These will pose no problem for the trained botanist but will be a little mysterious to the inexperienced. The inclusion of synonyms in the text and in the Index will prove most useful to the serious taxonomist, geographer, and ecologist since many of the taxa are widely distributed in Mexico, Central America, Caribbean, and South America where sometimes they have been known by other Latin names. There also is a glossary and nine pages of bibliography.

The preliminaries and the 52 pages of Introduction are a welcome dividend which will prove valuable to all planning research in the Galápagos. Included is a table of English and Ecuadorian names for the approximately 45 land masses in this archipelago. These range in size from almost negligible to approximately 1800 square miles in area and attaining an altitude of 5600 feet. Among the primary characteristics appear to be vulcanism, isolation, aridity, and the introduction of feral animals. The authors have cautiously dealt with dubious records of plants and point out the incomplete nature of the botanical information as hundreds of square miles probably have not been visited and difficult landings as well as the lack of water make many areas essentially inaccessible.

For the botanist the discussion of Vegetation Zones with lists of principal species, the History of Botanical Collecting, Scope of the Book and Methods of Treatment are of particular interest. The discussion of Materials Utilized, which identifies the major collections of plant specimens from the Galápagos and the institutions where housed and studied, reduces the need for citations of individual specimens. Table 2 neatly summarizes the numbers of taxa in each of the hierarchal groups of plants covered in the book. The 96 annotated and spectacular color photos show typical plants, vistas, and animals. Other topics dealt with are Settlement Pattern, Physiography, Geology, Climate, Soil Zones, Fauna, Discovery and Early History.

This reviewer would be the first to agree with Wiggins (1966, p. 175. In: *The Galápagos*, Ed. R. I. Bowman, Univ. Calif. Press) that often . . . "more emphasis has been placed on differences between the flora of the Galápagos Islands and that of the northern part of South America than on similarities that might have been observed had the latter features been sought with equal diligence. Botanists . . . have been prone to stress the number of "new species" or "new varieties" rather than seek similarities that would relate insular plants to those growing on the mainland of South America or in Mexico . . . [and] lack of information about . . . full distribution scope . . . [continues to] make it difficult to determine relationships of many Galápagos plants."

Perhaps in view of this there was conscious effort to leave endemism a little underdone. Wiggins and Porter note endemics following the species descriptions, but for the most part, the endemics are thereby lost by being distributed through some 900 pages. I would have wished for a discussion of endemism in the present book and an itemization of the 228 taxa—or some earmark in the Index to indicate presumed endemics so that one might begin to understand a little better their systematic distribution or single them out for more intensive study. Any criticisms, however, must remain picayune as the botanical contributors, artists, and the Stanford University Press clearly deserve congratulations on this significant and handsome first comprehensive taxonomic coverage of the vegetation of the Galápagos.—WALLACE R. ERNST, Department of Botany, Smithsonian Institution, Washington, D. C. 20560.